



BRIEFS

HAGUE JOINS THE TOURNAMENT PLAYERS CLUB AT DEERE RUN

SILVIS, Ill. — The Tournament Players Club at Deere Run has hired Chris Hague as its new golf course superintendent. Hague replaces Patrick Franklin, who recently took over as course superintendent at the Tournament Club of Iowa outside Des Moines. Hague will be returning to tournament golf as the point man for course conditioning for the PGA Tour's annual John Deere Classic set for July 22-28. Hague was the first golf course superintendent to host the nation's three major open championships — the U.S. Open, the U.S. Senior Open and the U.S. Women's Open. Previously, Hague was course superintendent at Baltimore Country Club at Five Farms.



Chris Hague

THE RESERVE AT LAKE KEOWEE NAMES MAXFIELD

SUNSET, S.C. — The Reserve at Lake Keowee has named Richard Maxfield as superintendent for the Jack Nicklaus Signature course. He will be responsible for growing in the course that is expected to open in fall 2002. Prior to joining the club, Maxfield worked as superintendent at the Palmetto Dunes Resort's Robert Trent Jones and George Fazio Golf Clubs in Hilton Head. The Reserve at Lake Keowee is being built by the Keowee River Club LLC, a partnership of the Keowee Toxaway Co. LLC and Greenwood Development Corp.



Richard Maxfield

PETERSON TO HEAD MCCULLOUGH'S EMERALD GOLF LINKS

VIENNA, Va. — Billy Casper Golf has hired Mark Peterson as superintendent of McCullough's Emerald Golf Links, a new public golf course near Atlantic City, N.J. Peterson is currently overseeing the grow-in of the Stephen Kay-designed layout that pays tribute to famous golf holes in France, Ireland and Scotland. The course will open in July.

GOLF COURSE NEWS

Water conservation plans require constant evaluation

By JAMES T. SNOW

FAR HILLS, N.J. — With drought conditions gripping the East Coast and parts of the western United States, water conservation issues have again been pushed to the forefront. While golf courses are often cited for misuse of water, the golf industry has recognized its responsibility to reduce water use and become less reliant on potable irrigation sources.

As research and technology progresses, superintendents should continue to evaluate, update and implement their water conservation programs. In recent years the turfgrass industry has developed varieties of turfgrass that use less water or can tolerate poor-quality water, introduced technologies that improve the efficiency of irrigation systems, and tapped alternative water sources that reduce or eliminate the use of potable water.

IMPROVED GRASSES REQUIRE LESS WATER

Since 1982 the United States Golf Association has distributed more than \$18 million through a university-grants program to investigate environmental issues related to the game of golf, with a special emphasis



James T. Snow

on the development of new grasses that use less water and require less pesticides.

For example, turfgrass breeders at the University of Nebraska have developed several improved cultivars of buffalograss, which is native to the American Great Plains. This grass can replace high water-use grasses on fairways and roughs in a large area of the Midwest, resulting in water savings of 50 percent or more.

At Oklahoma State University, turfgrass breeders also have developed improved cold-tolerant, seeded-type Bermudagrass cultivars, allowing for the establishment of this stress-tolerant, low water-use grass in the transition zone of the United States to replace high water-use cool-season grasses. Water savings of 30 percent to 50 percent or more can be realized.

Ruby Hill Golf Course in Pleasanton, Calif., features Bermudagrass fairways and roughs instead of the cool-season grasses used at nearly all other courses in northern California. As a result, the course estimates that it has reduced water use by about 40

Continued on page 12



IGM TO HANDLE MAINTENANCE FOR KISSIMMEE'S MYSTIC DUNES GOLF CLUB

CHAMPIONSGATE, Fla. — International Golf Maintenance has signed a maintenance agreement with Mystic Dunes Golf Club, located in Kissimmee, Fla. Mystic Dunes, an 18-hole course designed by Gary Koch, opened in August 2001. The course features dunes on the front nine and tree-lined fairways on the back nine. The second green, which is framed by two waterfalls, is pictured above.

Gypsum clears muddy water at The Club at Patriots Glen

By ANDREW OVERBECK

ELKTON, Md. — During the construction of The Club at Patriots Glen here, project superintendent Jim Kelley faced a potentially disastrous problem — his eight million-gallon irrigation pond was full of suspended clay and silt particles from construction runoff.

"We get all of our water from that pond, so we had to fix that problem before we could irrigate our new sand greens," said Kelley. "We

didn't spend all that money on greens just to plug them up with dirty, muddy irrigation water. As soon as we got the greens



Patriots Glen's irrigation pond before...



...and after gypsum application

seeded, we needed clean water." Kelley, whose company Evergreen Turf

Sudden Oak Death spreads in California

By DOUG SAUNDERS

MARIN COUNTY, Calif. — Back in 1999, Dave Sexton, superintendent at the Meadow Club in Marin County, noticed that something odd was happening to a tree at his golf course. The leaves of a large oak tree that provided shade by the club pool started to turn brown, and in just a few weeks the tree was dead. Little did he know then that he was witnessing first hand the virulent effect of a recently discovered virus, commonly known in the coastal counties as "Sudden Oak Death."



Tens of thousands of oaks along California's coastal counties have been wiped out by Sudden Oak Death.

"It was startling to see a tree succumb so quickly after the symptoms were noticed. I hardly had time to react to whatever was affecting the tree. I started to look for help to find what was the cause and soon learned about this virus," Sexton said.

Sudden Oak Death (SOD) is a microbial fungus that was first reported in 1995. Over the past six years, it has become a serious threat to California's 11 million acres of oak

Continued on page 14

is managing the new course, consulted with Wadsworth Golf Construction's Travis Barbee and decided to treat the six-acre pond with gypsum.

"We did some experiments in the shop first," said Kelley. "Hydrated lime worked really well but it was three times more expensive than gypsum. We also tried a polymer that is used to keep hot tubs from getting cloudy, but we weren't sure what that would do to bentgrass."

Kelley bought 10 tons of gypsum and used a hydroseeder to mix it into slurry and spread it out on the pond. It took a four-man crew 11

Continued on page 13

Digital Cyclone to offer Doppler radar for cell phones

SAN FRANCISCO — Motorola and Digital Cyclone have developed a weather radar application for Java technology-enabled Motorola mobile phones.

Digital Cyclone's Mobile My-Cast weather application uses a network of high-resolution

weather models and personalized radar imagery to help weather-sensitive businesses make better decisions. Users can receive current conditions, a nine-hour or seven-day forecast, and notifications regarding severe weather for their specific locations on their Motorola mo-

bile handsets.

"Mobile My-Cast is a planning tool that can help businesses make the correct weather-based decisions," said Paul Douglas, chairman and founder of Digital Cyclone and chief meteorologist with WCCO-TV in Minneapolis. "It is often difficult for weather-

sensitive businesses to provide relevant weather information to employees off site. This application helps isolate the forecast within a few blocks and provides real-time radar for their precise locations, helping mobile workers remain productive."

Users of the Motorola i90c,

i85s, and i50sx handsets can download Mobile My-Cast wirelessly at www.nextel.com/idenupdate. There is a subscription charge of \$14.95 per month to use the service.



The Doppler cell phone

Water conservation

Continued from page 9

percent compared with similar courses that use cool-season grasses.

Improved cultivars of seashore paspalum developed by turfgrass breeders at the University of Georgia are extremely salt-tolerant grass and can be irrigated with high-salt or brackish waters with little negative effect on turf quality. Cultivars are available for greens, tees, fairways and roughs, and some of these varieties can be irrigated with water directly from the ocean.

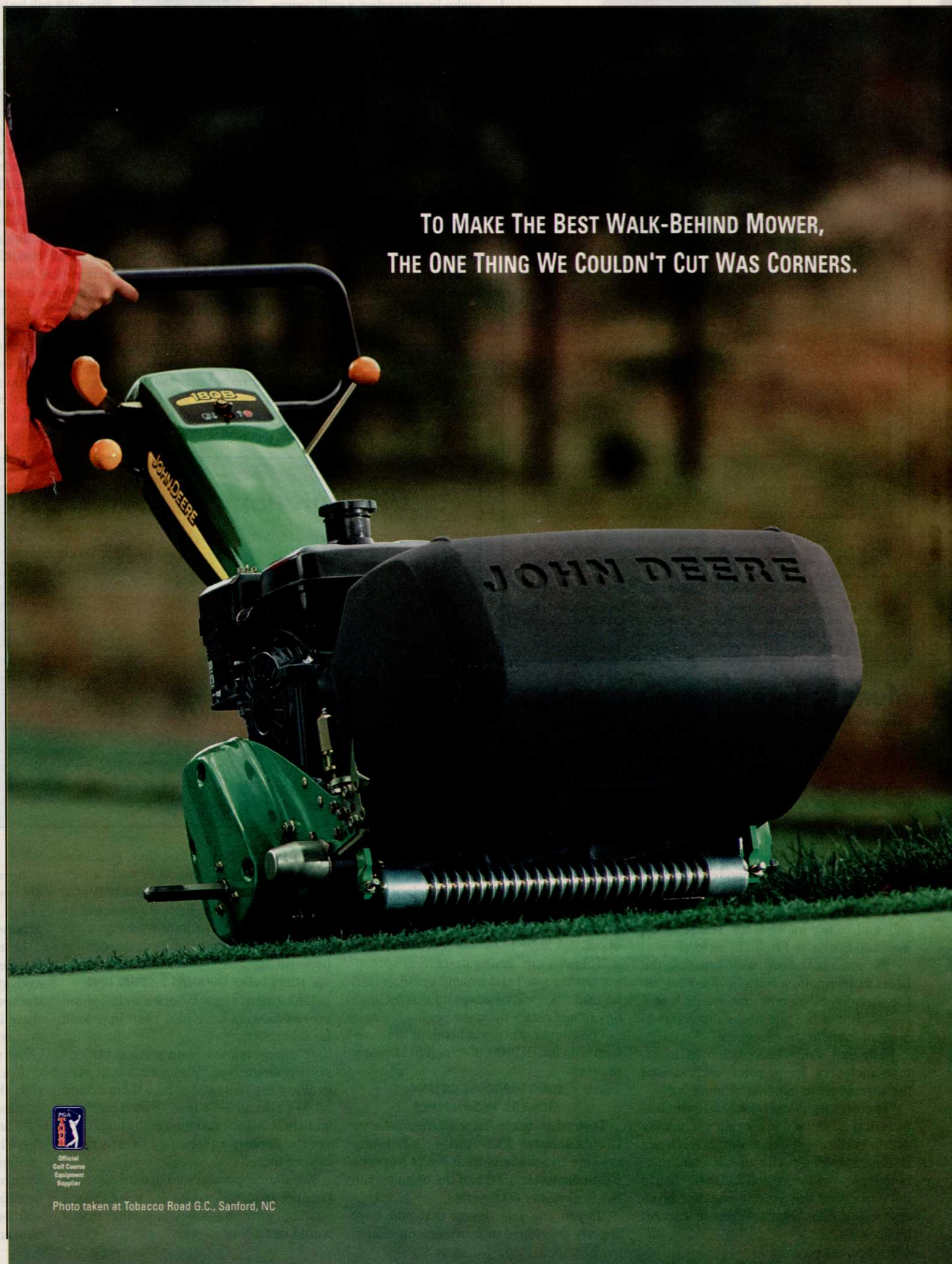
Research on other improved varieties is ongoing. Work is being undertaken on zoysiagrass (Texas A&M), saltgrass (Colorado State and Arizona State universities), annual bluegrass (Minnesota and Penn State universities), alkaligrass (Loft's Seed), fairway crested wheatgrass (Utah State University), colonial bentgrass (University of Rhode Island) and on a number of grass species at Rutgers University. This research, along with breeding work being done at other commercial seed companies, will provide new turf varieties for golf courses that reduce water use and pesticide use for decades to come.

NEW IRRIGATION SYSTEM TECHNOLOGIES

New irrigation system technology also has improved water-use efficiency on golf courses. Superintendents can reduce over-irrigation by using onsite weather stations, weather reporting services and other resources to determine accurate daily water-replacement needs. There also is a considerable effort being made to adapt various types of sensors to evaluate turf soil moisture-replacement needs, including tensiometers, porous blocks, heat-dissipation blocks, neutron probes and infrared thermometry.

In the meantime, using state-of-the-art computerized control systems, portable hand-held controllers and variable frequency-drive pumping systems remains the most efficient way to reduce water and energy consumption. For example, the Southern California Golf Association Members Club

Continued on next page



TO MAKE THE BEST WALK-BEHIND MOWER,
THE ONE THING WE COULDN'T CUT WAS CORNERS.



Official
Golf Course
Equipment
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Photo taken at Tobacco Road G.C., Sanford, NC

Muddy water

Continued from page 9

hours to completely cover the area and the entire treatment cost around \$3,000.

The finely ground gypsum (CaSO_4) clears muddy water by shrinking the layer of positively charged ions surrounding clay particles. As the number of these ions decrease, the attraction

from one particle to another increases, causing the colloids to clump together and settle out due to their increased weight. According to gypsum supplier United States Gypsum, the product has no adverse effects on water quality, plant



Gypsum being dispersed with a hydroseeder

or aquatic life and does not increase water hardness.

Kelley said the pond cleared three days after application and has not needed a reapplication. "I don't think we will have to use it again," he said. "The surrounding homes have all been built and the course opened last October so we don't have the excessive runoff that we had during construction." ■

Water

Continued from previous page

in Murrieta recently installed a new irrigation system that has reduced water use by about 35 percent. And because the club is able to complete its irrigation schedule in a short time frame during nighttime hours, it has reduced its energy costs by about 50 percent.

ALTERNATIVE WATER SOURCES

It is not hard to understand why many communities are concerned about golf course use of potable water supplies, either from municipal sources or from onsite wells, during periods of drought and water-use restrictions. In response, many golf courses have developed alternative irrigation-water supplies and methods that do not depend on potable sources.

These include using storage ponds to collect storm runoff water that might otherwise be lost and wasted and using effluent that has undergone a three-step (tertiary) treatment process. This recycled water provides moisture and nutrients to the golf course while helping the municipality avoid discharging the effluent water into nearby rivers. Turf does an excellent job of filtering the water of nutrients and breaking down various chemicals and biological contaminants in the water. Use of recycled water on golf courses is mandatory in some locales in the Southwest, and it is estimated that more than 1,000 courses nationwide use recycled water.

Brackish water or even ocean water can supplement other water sources. Bermudagrass is quite tolerant and seashore paspalum is very tolerant of high salt-content water, and these varieties allow golf courses to irrigate with brackish water that has few other uses. For example, the Old Collier Golf Club in Naples, Fla., is planting its greens, tees, fairways and roughs with two of the new seashore paspalum varieties emanating from the University of Georgia's turf-breeding program.

Reverse-osmosis (RO) desalination plants are another way to produce irrigation water from ocean water or brackish water where other supplies are not available or are very expensive. Three golf courses in Florida and one in the U.S. Virgin Islands have built RO plants in recent years, establishing good-quality, dependable and less costly supplies of irrigation water and allowing others in their communities to use the limited supply of potable water. ■



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James T. Snow is the national director of the USGA Green Section in Far Hills, N.J. Portions of this article were adapted from the International Turf Producer's Foundation publication, "Water Right—Conserving Our Water, Preserving Our Environment."